Region 7 Works Council

Evaulation of Career and Technical Education Opportunities
And
Initial Recommendations

November 1, 2013

Contents

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Initial Key Recommendations Summary

Region 7 Works Council

- Review and make recommendations on mathematical requirements at the secondary level. Some Core 40 requirements do not appear to align well with industry. Post secondary entrance requirements will also have to be considered. Potential future workers mathematical skills are not meeting industry needs.
- Provide specific recommended changes needed for Work-Based learning to allow for maximum flexibility with better defined and advertised protections for both the student and host business/industry.
- Develop a "Multi-Craft" pathway with flexible teacher licensing to allow an avenue for needed industry skills to be delivered in small schools and schools with remote geographic locations. Funding will be required for the development and implementation.
- Develop a "Robotics and Automation" pathway to help fill the gap in programming, operators, maintenance, and logistics. Funding will be required for the development and implementation.
- Solicit approval for a separate "Process Engineering" pathway and recognition of an "Advanced Manufacturing" pathway alternative with revised titling to differentiate from existing pathway focus.
- Solicit approval and funding to provide high school access to the WorkOne WIN software and the National Career Readiness Certificate with a younger age restriction to allow all seniors access at a minimum. This could be provided statewide like Indiana Career Explorer. This is one of possibly additional recommendations related to improving "Employability Skills" in the future workforce.
- Re-establish middle level introductory CTE classes where they have been eliminated.

- Create a deliberate mechanism to increase industry-education partnerships that can help fill skills gaps and educate the community on career opportunities. This should include active participation in school open houses/orientations, career fairs, counselor academies, industry tours, industry leader assisted technical training and in guest industry instructors. Changing community perception of several career opportunities will be a team effort. An active mechanism may require a dedicated person for oversight and coordination.
- Secure State funds and matching funds to help implement goals that will include costs for schools or career centers in the region. Industry aligned equipment in CTE programs and personnel are two potential significant expenses associated with several of the above recommendations.

Region 7 Works Council reserves the right to amend any current recommendations or provide additional recommendations at a later date. An expanded vision for each recommendation will be provided in the coming months that includes; key implementation details and cost. Additional explanations that lead the council to these recommendations can be provided upon request.

Secondary Career & Technical Education Summary

Summary Description of Public Schools

Works Council Region 7 is made up of 6 counties (Clay, Parke, Putnam, Sullivan, Vermillion, & Vigo) and includes 10 school corporations. There are 4 different Career and Technical Education Districts (CTED) represented in Region 7. Three are entirely located in the region and one is partially located in the region. One CTED has a career center while the other CTED's are cooperatives, meaning that students can go to multiple locations to have career pathway opportunities. In many cases, students can participate in career pathways in another county to help maximize opportunities. Of the 19 high schools, 8 have less than 400 students, 8 have between 400 and 650 students, 1 has between 1,000 and 1,500 students, and 2 have more than 1,500 students. There are career pathway opportunities for all 11 career clusters in the region.

Summary of Career Pathways, Dual Credit, and Industry Certification Opportunities

Agriculture Cluster- Nine comprehensive high schools in the region are offering pathways in the Agriculture Cluster. Four of the high schools do not offer any dual college credit or industry certifications in any agriculture pathways. Two high schools offer dual college credit with Purdue University in the Animal Science Pathway and Plants & Soils Pathway. One school offers dual college credit in the Agribusiness Pathway and Natural Resources Pathway with Ivy Tech Community College. Another high school offers dual college credit in Horticulture & Landscape Management Pathway and the Landscape Management Pathway with Vincennes University. None of the five high schools in the largest school corporation in the region, offer any pathways in the Agriculture Cluster.

Architecture & Construction- There are three general construction pathways in the region. Students from multiple schools attend each program. Two programs build a house from scratch each year at a remote site and have dual college credit with Vincennes University. One program focuses on remodeling. There is a fourth program that provides the Heavy Equipment Pathway and provides dual college credit through Vincennes University and an OSHA 10 hour safety certification. In addition, three schools offer the Drafting and Design Pathway. Two of them provide dual college credit with Ivy Tech Community College. One of the schools offers both Mechanical and Architectural Drafting as options.

Arts, AV, Tech & Communications- Seven comprehensive high schools and a career center offer pathways in this cluster. Three focus on the Interactive Media Pathway with one of them providing dual college credit with Vincennes University. Two focus on Visual Communications and operate full printing labs. Both have dual college credit with Vincennes University. An alternative high school offers two pathways with dual college credit for one pathway with Ivy Tech Community College and the other with Indiana State University. Two comprehensive high schools offer every pathway in this cluster except Commercial Photography. Three of the pathways have dual college credit with Ivy Tech Community College and one of the pathways dual college credit is with Indiana State University.

Business & Marketing- Twelve comprehensive high schools provide at least one career pathway in this cluster. Eight schools offer the Entrepreneurship and Management Pathway with five of them offering dual college credit with Ivy Tech Community College and three of them also offer the IC3 industry certification. Five of the eight Entrepreneurship and Management Pathway schools only offer this pathway in this cluster. Five high schools offer the Marketing Pathway. Four of the five offer dual college credit with Ivy Tech Community College and two of them offer the IC3 industry certification. Four offers the Accounting and Finance Pathway with one providing dual college credit with Ivy Tech Community College and Indiana State University and offer the IC3 industry certification. One school offers all three pathways with dual college credit available.

Education & Training- Five comprehensive high schools and a career center offer pathways within this cluster. One high school offers the Early Childhood Pathway only, with dual college credit with Ivy Tech Community College with an in-house daycare/preschool. One high school offers the Education Careers Pathway with dual college credit with Ivy Tech Community College. The career center operates a preschool/daycare while offering both pathways and providing dual college credit with Indiana State University and Pre-Pac certifications. The remaining three comprehensive high schools offer both pathways with dual college credit with Ivy Tech Community College and Indiana State University. One school operates a preschool, while the other two offer additional work-based learning opportunities as part of the embedded curriculum.

Health Science- There is one Biotechnology Pathway in the region. There are six sites that are offering the Health Science Careers Pathway and the Nursing Pathway. All six sites provide dual college credit with Ivy Tech Community College and provide the opportunity to earn the CNA Industry Certification or NCHSE industry certification. Three of the programs funnel into one second year program at an area hospital. The other three programs also have close ties with area hospitals and other care facilities.

Hospitality & Human Services- There is one Cosmetology Pathway opportunity in the region. This opportunity includes dual college credit with Vincennes University and State Licensing. There is one Culinary Arts Pathway with dual college credit with Ivy Tech Community College and both Pre-Pac and ServSafe certifications. The Culinary Arts Pathway also operates a restaurant that serves lunch at the career center. There are three Hospitality Management Pathway opportunities with dual college credit with Ivy Tech Community College and ServSafe certification.

Information Technology- Two comprehensive high schools provide the Programming Pathway with dual college credit with Ivy Tech Community College and offer the IC3 industry certification. There is one Networking Pathway that provides A+ and Net+ industry certifications. Three sites provide the PC Support Pathway with dual college credit with Ivy Tech Community College and offer the A+ and IC3 industry certification.

Manufacturing & Logistics- Six sites offer the Advanced Manufacturing Pathway. One of them provides dual college credit with Ivy Tech Community College and the MSSC certification. One of them provides dual college credit with Ivy Tech Community College and the HIRE Tech certifications. Four of the programs provide dual college credit through Indiana State University. Two comprehensive high schools offer the Electronics Pathway with dual college credit with Ivy Tech Community College. There are nine Engineering Pathway opportunities, eight of them with dual college credit with Ivy Tech Community College. Most Engineering Pathways are Project Lead the Way (PLTW) certified. There is one Logistics Pathway with dual college credit with Ivy Tech Community College and offering HIRE Tech logistics certifications. Five high schools offer the Machining Pathway with three offering dual college credit with Ivy Tech Community College and NIMS certifications and one offering dual college credit with Vincennes University. Four sites offer the Welding Pathway with three of them offering dual college credit with Ivy Tech Community College and AWS Sense certifications. The fourth site offers dual college credit with Vincennes University and Ivy Tech Community College.

Public Safety- Two sites offer the Criminal Justice Pathway with dual college credit with Vincennes University. Two sites offer the EMT/Paramedic Pathway with dual college credit with Ivy Tech Community College and EMT certification. One EMT/Paramedic Pathway is new and still building enrollment.

Transportation- Two sites offer the Automotive Collision Repair Pathway with dual college credit with Ivy Tech Community College. There are seven sites with the Automotive Technology Pathway. Four offer dual college credit with Ivy Tech Community College and the opportunity for the ASE student certification. Two offer dual college credit with Vincennes University and the opportunity for the ASE student certification. One offers dual college credit with both Vincennes University and Ivy Tech Community College.

Summary of Pathways by Cluster Not Offered and Rationale

Architecture & Construction- Currently five pathways are not offered. These pathways are; Residential & Commercial Facilities Management, Building & Facilities Management, Building & Facilities Maintenance, Construction Trades-Electrical, and Construction Trades-HVAC. Building and Facilities Maintenance is being considered by one district and has moved through the approval process to offer. Both HVAC & Electrical are not offered as separate pathways because the content is included in the Construction Trades program. Both facilities management pathways are not currently offered because demand data does not support the need at this time in the region.

Arts, AV, Tech & Communications- Commercial Photography is a pathway that has been eliminated at several locations because demand data no longer supports the need for this pathway. Some of the content in Commercial Photography is also duplicative to the Visual Communications Pathway which is being offered.

Health Science- Currently Dental, Dietetics & Nutrition Science, and Veterinary pathways are not currently offered. A portion of the second year Health Science Careers Pathway allows students to study specialties like these without offering a different pathway, allowing students to have the opportunity to explore these other specialties.

Hospitality & Human Services- There is currently one Cosmetology Pathway being offered in a high school or career center. One county has an agreement to send students interested out of county for this opportunity while at least two of the other counties have private schools solely focused on this career pathway that students may attend on their own.

Public Safety- The Fire and Rescue Pathway is not currently offered in a high school or career center. One county has an agreement to send students interested out of county for this opportunity. Many of the counties have a robust volunteer fire fighter system that is equipped to provide training to adults that are interested in the field. Portions of many communities are serviced by volunteer fire fighters which affects wage and demand data to support adding this pathway.

Transportation- Four pathways are currently not offered including Aviation, Diesel Service Technology, Recreational and Mobile Equipment, and Tractor Trailer Operations. One county has an agreement that would allow students to take Diesel Service and Tractor Trailer Operations out of county. The foundation for Diesel Service Technology is taught in the Automotive Service Pathway and some middle schools in the region incorporate small engines, which is a focus of Recreational and Mobile Equipment as part of the middle school introductory feeder system. The adult WIA system has also provided Tractor Trailer Operations in the region. The lack of a large commercial airport limits the demand for the Aviation Pathway.

Summary of Additional School Related Information

Smaller School Structure- Many of the smaller schools in the region offer introductory classes in; Family and Consumer Sciences (FACS), Business, Marketing and Information Technology (BMIT), and Engineering/Technology Education (ETE). In some cases, these courses are offered every other year because of limited resources and teaching staff. This allows schools to provide introductory level classes in several career pathways and then providing students the opportunity to travel to another location in the career and technical education district to complete the entire pathway.

Dual College Credit- The only pathway that was found to not have a dual college credit agreement or industry certification in the region was the Human Services Career Pathway. It is the committees understanding that the post secondary requirements to teach classes and the license that is required by the Indiana Department of Education are significantly different and teachers cannot be hired that meet both sets of requirements at the same time. In addition this pathway does not have a recognized industry certification.

Some individual programs were found to not have dual credit for various reasons. In many cases it related to teacher credentialing. In some cases the post secondary institution requires the secondary teacher to have a master's degree and the teacher does not, making them ineligible to provide dual college credit. In a few cases an industry certification was keeping dual college credit from being offered. For example some dual college credit in the Finance Pathway requires the teacher to be a CPA and this is not a common certification for teachers in this area because of the requirements and industry opportunities with this certification.

Industry Certifications- Industry certifications value and implementation vary greatly by pathway's within the region. In the Health Science Cluster, both Certified Nurse's Assistant (CNA) and the National Consortium on Health Science Education Health Care (NCHSE) exam are very well received and are growing in participation. According to schools the NCHSE exam is being used because the State pays for it and the CNA exam is popular because it is a requirement with many post-secondary nursing programs allowing students to meet this requirement while still in high school. Both certifications appear to have some value and support in industry. In some districts in the region industry certifications like the Internet and Computing Core Certification (IC3) are being used as a benchmark for all Business pathways to show a specific level of computer literacy but are not currently supported by the State.

There are several certifications in the Manufacturing Cluster that it is unclear on the value level by industry. For example the AWS Sense certification is not viewed as important by industries interviewed because those companies will retest and certify a person when they are hired. Some industry professionals view this as an unnecessary extra step and are concerned that schools may be teaching specifically to the AWS test. Some industry professionals value the NIMS certifications, not because of the testing mechanism and the certificate but because it maps out

very specific projects that a potential employee can bring in to show and describe how they went about making the projects. It appears the MSSC Certified Production Technician (CPT) certification is the most divisive. Many schools have tried to offer the program with very limited success citing poor student retention. One post secondary institution values it very highly, awarding 6 college credits to students that pass the certification while two others do not give any credit recognition for the certification. Some industry partners see value in it as an adult training tool but have not expressed an opinion on its value at the high school level but many more don't know what the certification is.

In the Construction Cluster there are two emerging certification tests or programs. Neither has been widely used in the region. The certification series developed by the National Association of Home Builders has a textbook series that aligns with it and the books are being used in some building trades programs but the certification tests are not being given because a separate test is required for dual college credit. Another program developed by the Carpenters Union was just released and provides resources for teaching construction concepts starting at the middle level and carries all of the way into the apprenticeship program. The Carpenters Union program also has an "Employability Skills" curriculum integrated into their program. All members of the construction industry are very willing to work with pathways in this cluster with or without a certification. The top concern appears to be student interest.

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Summary of Future Opportunities and Forward Thinking

Process Engineering- One School in the region is operating a higher level manufacturing pathway and referring to it as "Process Engineering". The students use computer controlled machines and automated processes to make real products. Students learn to use the latest hi-tech equipment and software. Students learn to use Computer-Aided-Design (CAD) and Computer-Aided-Manufacturing (CAM) to take a product from concept to production. These students can earn up to 9 dual college credits and multiple industry certifications including NIMS CNC Milling & Turning Programming Setup and Operations Level 1.

Advanced Manufacturing (schools would like to use an alternative title to help with recruitment)- Four schools that are currently struggling with Advanced Manufacturing student retention and certification, are working with a local college as part of an Innovation Grant to pave the way for revised curriculum and delivery strategies that meet State standards while ending with aligned dual college credit with a four year institution. Information from multiple sources is being used to develop this new approach including input from current industry partners and notes from the original State Advanced Manufacturing development team. This hands-on approach to manufacturing includes a capstone Supervised Advanced Manufacturing Experience (S.A.M.E.)

Industry Involvement Impact- A Machining Pathway at a school had industry representatives perform demonstrations during an open house/student orientation in their uniform. The owner of the company was also in attendance to discuss with parents opportunities in the machining field. At this open house there was a line of parents and students stretching into the hall to see the industry professionals perform and create magical items with the CNC machines. Enrollment significantly increased for that pathway at that school the next year. This high-profile industry participation had an impact on the parents' perception of career opportunities and the future in this particular field.

Counselor Academy- Some school districts are providing a "Counselor Academy" for middle and high school counselors to learn more about career pathways and workforce opportunities. There are a couple of different structures in the region. All counselor education programs include an industry tour component. Some provide hands-on experiences for the counselors in each pathway and then share important workforce data. This program has helped counselors better understand career opportunities in several pathways.

Career Pathways in Region 7

The following chart identifies by county in the region the number of State recognized career pathways that are currently being offered. The number represents the number of sites that the "entire" Career Pathway is offered in the county. Entire is defined as the student has the ability to become a Concentrator and Completer at the location. A number was not put in a box if there was an agreement that a student could travel outside the region to take a pathway at a post secondary institution or a cooperative site located in another county not located in the region. This primarily impacts Sullivan County which is a part of the Twin Rivers Cooperative and provides the option to travel to Vincennes University or other sites at the student's expense to complete some pathways. Parke and Vermillion counties are also in the same consortium and students can travel between the counties to take career pathways.

Indiana Career Clusters (in bold) and College and Career Pathway Course Sequences	Vigo County	Clay County	Sullivan County	Vermillion County	Parke County	Putnam County
AGRICULTURE						
• Agribusiness		2	1	1	1	
• Horticulture & Landscape Management			1		1	
• Life Sciences – Animal Science			1	1	1	2
• Life Sciences – Food Science				1		
• Life Sciences – Natural Resources		1			1	
• Life Sciences – Plants & Soils			1		1	2
ARCHITECTURE & CONSTRUCTION						
• Commercial & Residential Facilities - Residential &						
• Commercial & Residential Facilities – Building &						
• Commercial & Residential Facilities – Building &						
• Construction Trades – Construction	1	1		1		
• Construction Trades – Electrical						
• Construction Trades – Heavy Equipment						1
• Construction Trades – HVAC						
• Drafting & Design – Architectural	1	1		1		
• Drafting & Design – Mechanical	1					
ARTS, AV, TECH & COMMUNICATIONS						
• Web & Digital Communications - Interactive	4				1	1
• Web & Digital Communications - Radio & TV	2					
• Visual Arts - Commercial Photography						

• Visual Arts - Fashion, Textiles and Design	3					
• Visual Arts - Visual Communications	2			1		
BUSINESS & MARKETING						
• Business Administration – Accounting and Finance	1			1	1	
• Business Administration – Entrepreneurship &	4		1	1	1	
• Business Administration – Marketing	2	1		1		
EDUCATION & TRAINING						
• Early Childhood Education - Early Childhood	4				1	1
• Early Childhood Education - Education Careers	3	1				1
HEALTH SCIENCE						
• Biotechnology					1	
• Dental						
• Health Care Specialties – Health Science Careers	3	1		1		1
• Health Care Specialties – Dietetics & Nutrition						
• Health Care Specialties – Veterinary						
• Nursing	3	1		1		1
HOSPITALITY & HUMAN SERVICES						
• Cosmetology					1	
• Culinary Arts						1
• Hospitality Management	3					
• Human & Social Services	3					
INFORMATION TECHNOLOGY						
• Programming	2					
• PC Networking & Support – Networking						1
• PC Networking & Support – PC Support	2				1	
MANUFACTURING & LOGISTICS						
• Advanced Manufacturing	4	2		1		
• Electronics	2					
• Engineering	2		1	2	3	1
• Logistics and Supply Chain Management	1					
• Machine Technology	3		1	1		
• Welding	2		1	1		1
PUBLIC SAFETY						
• Criminal Justice					1	1
• EMT/Paramedic	1					1

• Fire and Rescue						
TRANSPORTATION						
• Automotive Collision Repair	1					1
• Automotive Technology	3	1	1		1	1
• Aviation						
• Diesel Service Technology						
• Recreational and Mobile Equipment						
• Tractor Trailer Operations						

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Dual Credit and Industry Certification Summary

The following chart identifies by county in the region the number of dual college credits earned and industry certifications earned during the 2012-2013 school year in Career and Technical Education. Only industry recognized certifications are included. Professional educational organizations and Project Lead the Way testing is not included in the certification numbers. Parke and Vermillion County are being combined because students regularly cross county lines to complete career pathways and they are in the same CTED. Sullivan County students that earned the dual college credit or industry certification outside of the region are also included in the numbers. This information is one year newer than the State data and includes students that are not yet concentrators or completers in a career pathway. The dual college credits earned is the actual number of college credits and not number of students. Industry certifications include introductory industry certifications (ie. ServSafe and IC3) that are not counted by the State. The certifications earned do not include CPR which is taken by several hundred students in multiple pathways.

County	Dual College Credits Earned	Industry Certification Earned
Vigo	2,406	153
Clay	440	12
Sullivan	800	5
Vermillion/Parke	890	18
Putnam	769	83

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Enrollments, Dual Credits Earned and Industry Certifications

(Summary of data provided by the State for Region 7)

All State data is based on 2011-2012 collected information in the State Inters data reporting system. Only industry certifications on the State approved list are reported in the following chart. Enrollments are based on "Count Day" reporting and some schools calendars (ie. trimesters) may show as a lower enrollment by pathway. Dual college credit numbers may be lower than actual because this information is entered for students based on the "Count Day" entry. A student could take a course in a pathway, earn dual college credit and earn an industry certification and possibly not show up in the State data or on this report. This can be caused by alternative school schedules, data entry errors, data importing or exporting errors, transient population, or at the school level when schedules are being entered. The previous chart shows all CTE dual college credit earned and all industry certifications earned in 2012-2013 which is the most recent data available from the CTE districts. The State Inters data reporting system has improved in recent years. The State also provides excellent technical support for this system. In some cases the State system is more advanced than some school district systems. Both Inters and district level systems are dependent on human data entry.

Course Name	Industry Certification Passed/ Attempted	Enrollments (duplicated count)	Students Earning Dual Credits for the Course
(PLTW) Computer Integrated Manufacturing		4	4
(PLTW) Engineering Design and Development		6	0
(PLTW) Introduction to Engineering Design		252	84
(PLTW) Medical Interventions		2	0
(PLTW) Principles of Biomedical Sciences		20	0
3D Computer Animation and Visualization		12	2
Adult Roles and Responsibilities		94	0
Advanced Business Management		144	41
Advanced Child Development		5	0
Advanced Life Science: Animals (L)		66	6
Advanced Life Science: Foods (L)		14	0
Advanced Life Science: Plants and Soils (L)		46	28
Advanced Manufacturing I		413	0
Advanced Nutrition and Wellness		177	3
Agriculture Power, Structure and Technology		56	21
Animal Sciences		121	8
Architectural Drafting and Design 1		59	0

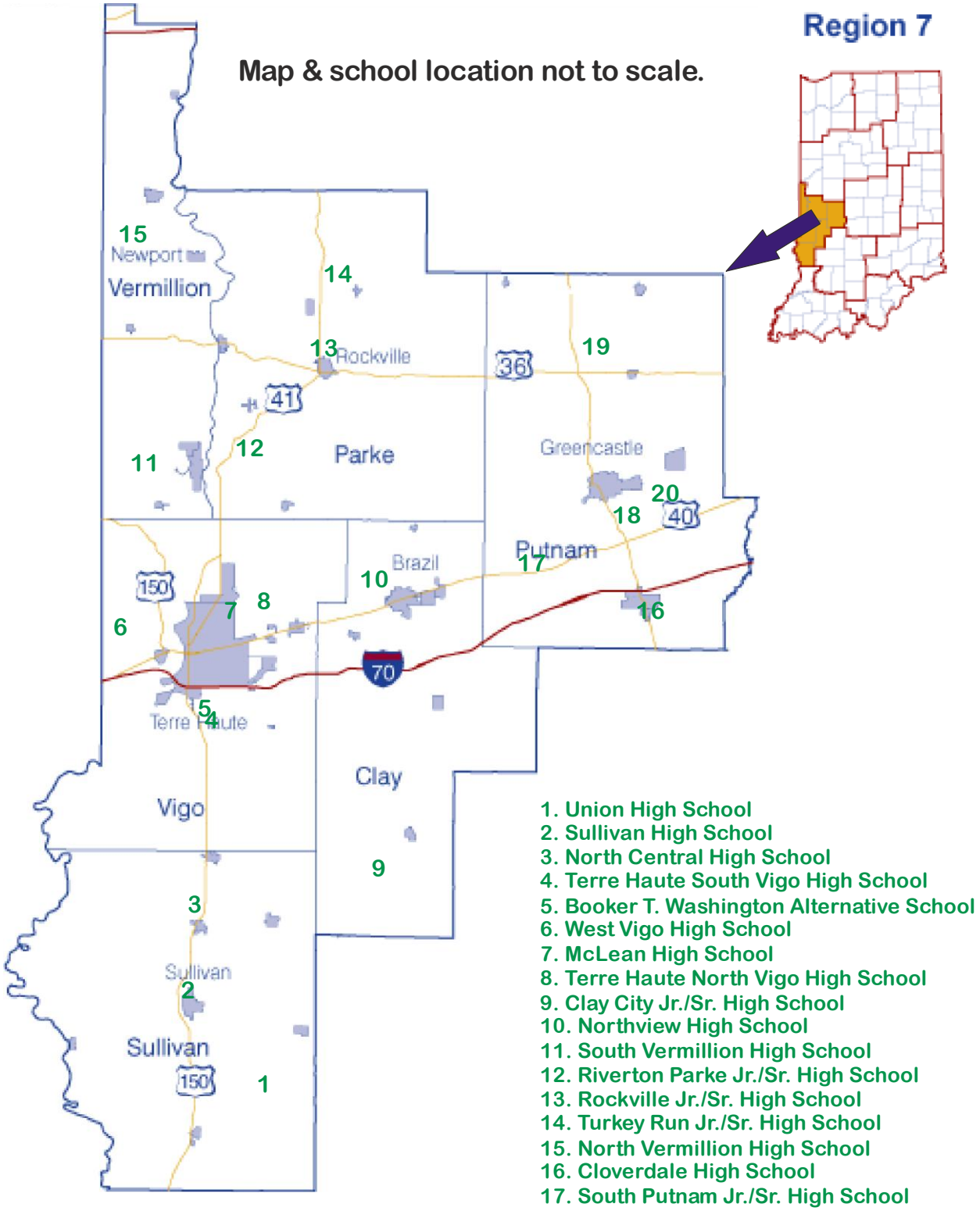
Automotive Collision Repair Technology I	3/4	144	33
Automotive Services Technology I	3/4	341	141
Automotive Services Technology II	6/13	13	13
Business Cooperative Experiences		43	11
Business Technology Lab I	1/1	21	7
Business Technology Lab II	5/5	167	24
Child Development		712	11
Civil Engineering and Architecture non PLTW		12	9
Civil Engineering and Architecture PLTW		5	4
Computer Programming II		52	21
Computer Repair & Maintenance Tech		12	0
Computer Tech Support		20	16
Construction Technology I		96	12
Cosmetology I	4/4	23	0
Criminal Justice I		26	13
Culinary Arts and Hospitality Management	2/2	8	0
Early Childhood Education I	8/15	170	71
Education Professions II		12	0
Electronics and Computer Technology I		135	2
Financial Services		111	0
Graphic Design and Layout		52	22
Graphic Imaging Technology		161	37
Health Science Education I	56/56	60	0
Health Science Education II	14/14	50	39
Health Science II: Pharmacy		2	0
Health Science II: Special Topics	7/9	13	2
Horticultural Science		55	7
Human and Social Services I		28	0
Human Development and Family Wellness		110	0
Interactive Media		180	15
Interdisciplinary Cooperative Education		121	0
Interpersonal Relationships		279	6
Intro Health Care Systems		238	111
Introduction to Agriculture, Food and Natural Resources		146	36
Introduction to Culinary Arts and Hospitality		10	2
Introduction to Fashion and Textiles		191	0
Introduction to Housing and Interior Design		84	0
Landscape Management		25	9
Marketing Field Experience		32	8
Medical Terminology		17	0
Natural Resources		43	0

Network Fundamentals		15	15
Nutrition and Wellness		1158	39
Personal Resource Management and Family Finance		110	0
Plant & Soil Science		8	0
Precision Machining I		211	24
Preparing for College and Careers		1335	56
Principles of Engineering non PLTW		85	0
Principles of Engineering PLTW		108	48
Principles of Marketing		139	14
Professional Career Internship		91	0
Radio and Television I		97	8
Sports and Entertainment Marketing		142	16
Strategic Marketing	2/3	22	19
Veterinary Careers I		9	8
Veterinary Careers II		15	15
Welding Technology I		229	27
Total	**114/135**	**9285**	**1,168**

Region 7 CTE Snapshot		
2011-12 School Year		
	Region	Statewide
High School Graduation Rate	89%	86%
Total High School Population	19,834	344,863
CTE Graduation Rate	95%	94%
Total CTE Certifications Awarded/Assessments Passed	114	4,148

	Participants	Concentrators	Statewide Participants	Statewide Concentrators
Total	6,754	1,160	147,805	34,707
Number Earning Dual Credits	1,353	570	21,407	10,998
Number Earning/Passing Certifications	94	74	3,332	2,567
Placement in Workforce*	n/a	519	n/a	11,119
Placement in Postsecondary*	n/a	8	n/a	344
Placement in Related Postsecondary*	n/a	3	n/a	61

*Data for placement in workforce and postsecondary is not finalized until December 2013



1. Union High School
2. Sullivan High School
3. North Central High School
4. Terre Haute South Vigo High School
5. Booker T. Washington Alternative School
6. West Vigo High School
7. McLean High School
8. Terre Haute North Vigo High School
9. Clay City Jr./Sr. High School
10. Northview High School
11. South Vermillion High School
12. Riverton Parke Jr./Sr. High School
13. Rockville Jr./Sr. High School
14. Turkey Run Jr./Sr. High School
15. North Vermillion High School
16. Cloverdale High School
17. South Putnam Jr./Sr. High School
18. Greencastle Senior High School
19. North Putnam Senior High School
20. Area 30 Career Center

Regional Employment Sectors

Regional data comes from the Economic Modeling Specialists International (EMSI) which is a data analysis system that the WorkOne system utilizes. State data sources include the Indiana Department of Workforce Development and National data sources include the Bureau of Labor Statistics, IPEDS, and O*NET database. The Location Quotient (LQ) in some graphics is a way to quantify how concentrated a particular region compares to the nation with 1.0 being the national average.

Regional Snapshot

EGR 7 | Jobs by Industry

107,900	52.8%	47.2%
Total Jobs (2013)	Male (National: 52.2%)	Female (National: 47.8%)

NAICS	Industry	2013 Jobs
11	Agriculture, Forestry, Fishing and Hunting	3,567
21	Mining, Quarrying, and Oil and Gas Extraction	1,459
22	Utilities	703
23	Construction	5,177
31-33	Manufacturing	14,492
42	Wholesale Trade	2,072
44-45	Retail Trade	12,219
48-49	Transportation and Warehousing	3,741
51	Information	1,079
52	Finance and Insurance	3,640
53	Real Estate and Rental and Leasing	2,934
54	Professional, Scientific, and Technical Services	2,649
55	Management of Companies and Enterprises	468
56	Administrative and Support and Waste Management and Remediation Services	5,559
61	Educational Services (Private)	4,349
62	Health Care and Social Assistance	11,545
71	Arts, Entertainment, and Recreation	1,280
72	Accommodation and Food Services	8,468
81	Other Services (except Public Administration)	5,795
90	Government	16,703
99	Unclassified Industry	0

Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 22, 2013

EGR 7 | Average Earnings by Industry

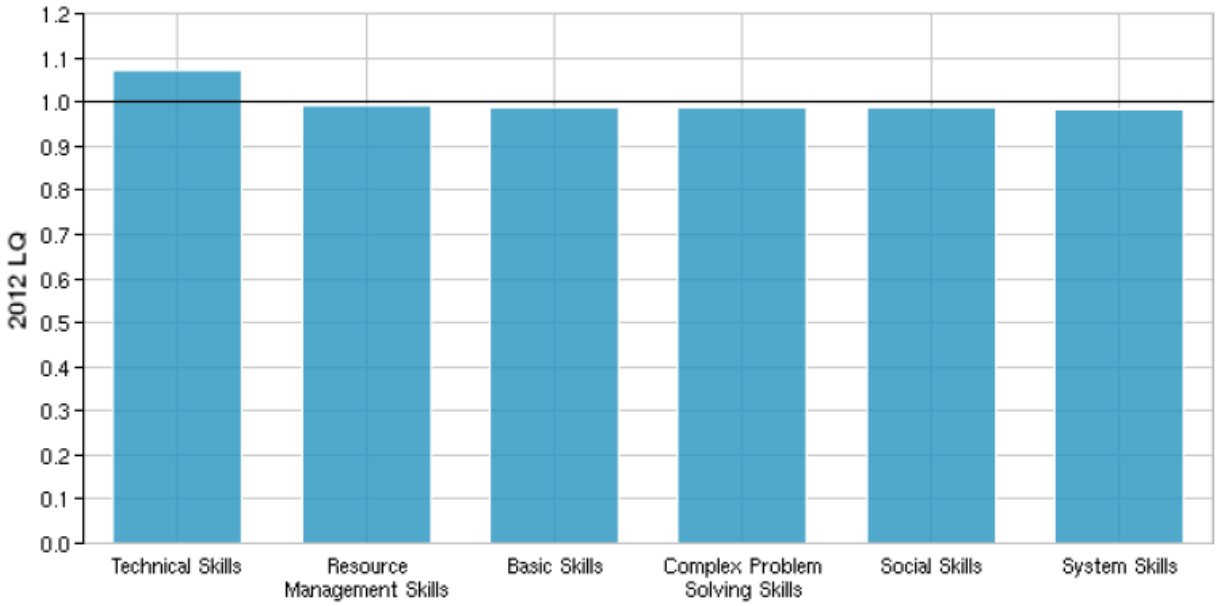
$38,100	$45,230	$30,131
Avg. Earnings (2013)	**Male Avg. Earnings (2013)**	**Female Avg. Earnings (2013)**
75% of Nation Avg.	74% of Nation Avg.	76% of Nation Avg.

NAICS	Industry	Avg. Earnings (2013)
11	Agriculture, Forestry, Fishing and Hunting	$27,227
21	Mining, Quarrying, and Oil and Gas Extraction	$66,627
22	Utilities	$109,668
23	Construction	$46,792
31-33	Manufacturing	$58,574
42	Wholesale Trade	$47,688
44-45	Retail Trade	$22,683
48-49	Transportation and Warehousing	$44,921
51	Information	$40,487
52	Finance and Insurance	$38,721
53	Real Estate and Rental and Leasing	$22,205
54	Professional, Scientific, and Technical Services	$35,864
55	Management of Companies and Enterprises	$58,102
56	Administrative and Support and Waste Management and Remediation Services	$19,865
61	Educational Services (Private)	$34,340
62	Health Care and Social Assistance	$46,994
71	Arts, Entertainment, and Recreation	$11,429
72	Accommodation and Food Services	$14,425
81	Other Services (except Public Administration)	$18,945
90	Government	$46,910
99	Unclassified Industry	$0

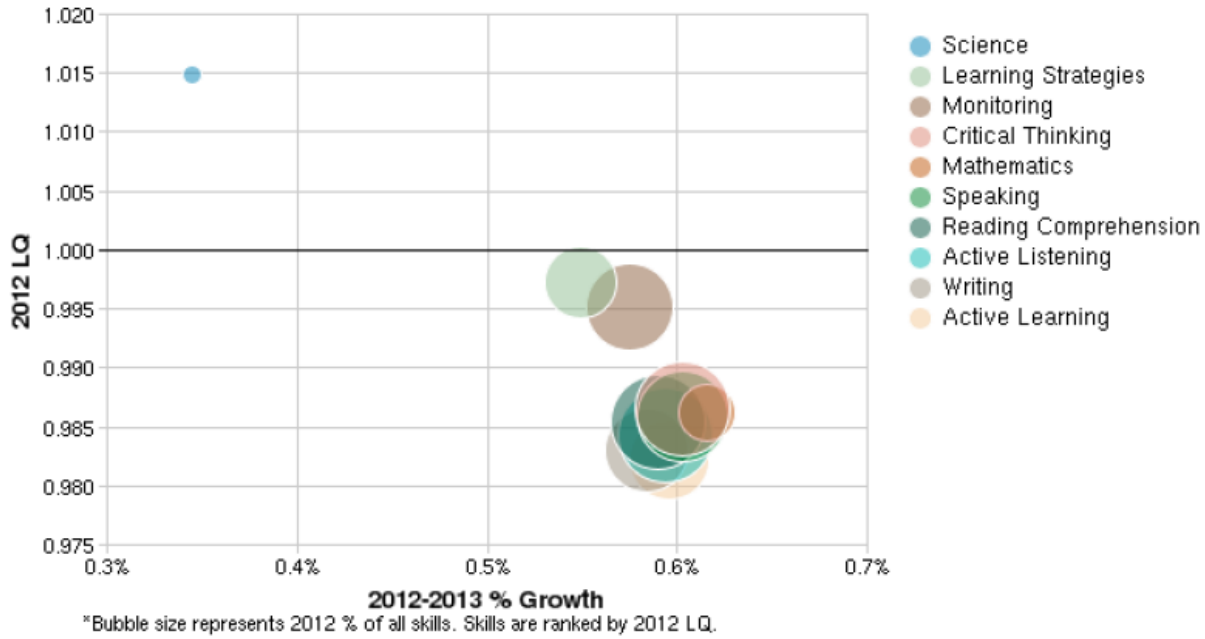
Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 22, 2013

Human Capital

Skills Summary

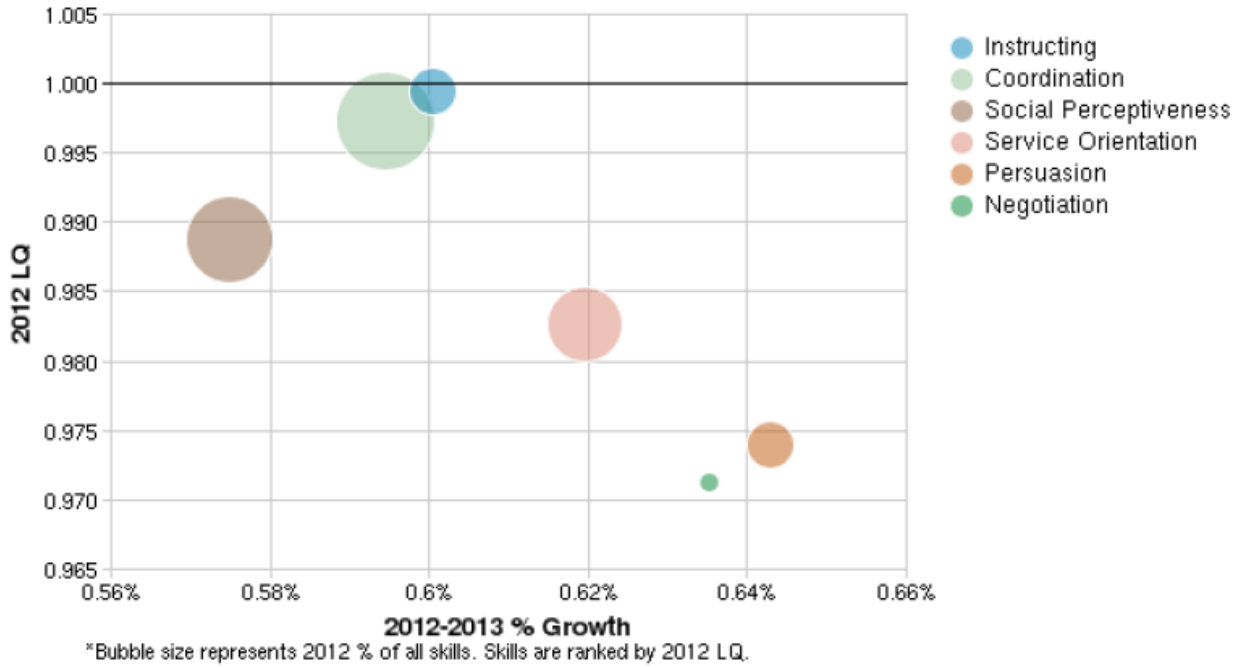


Basic Skills Concentrations



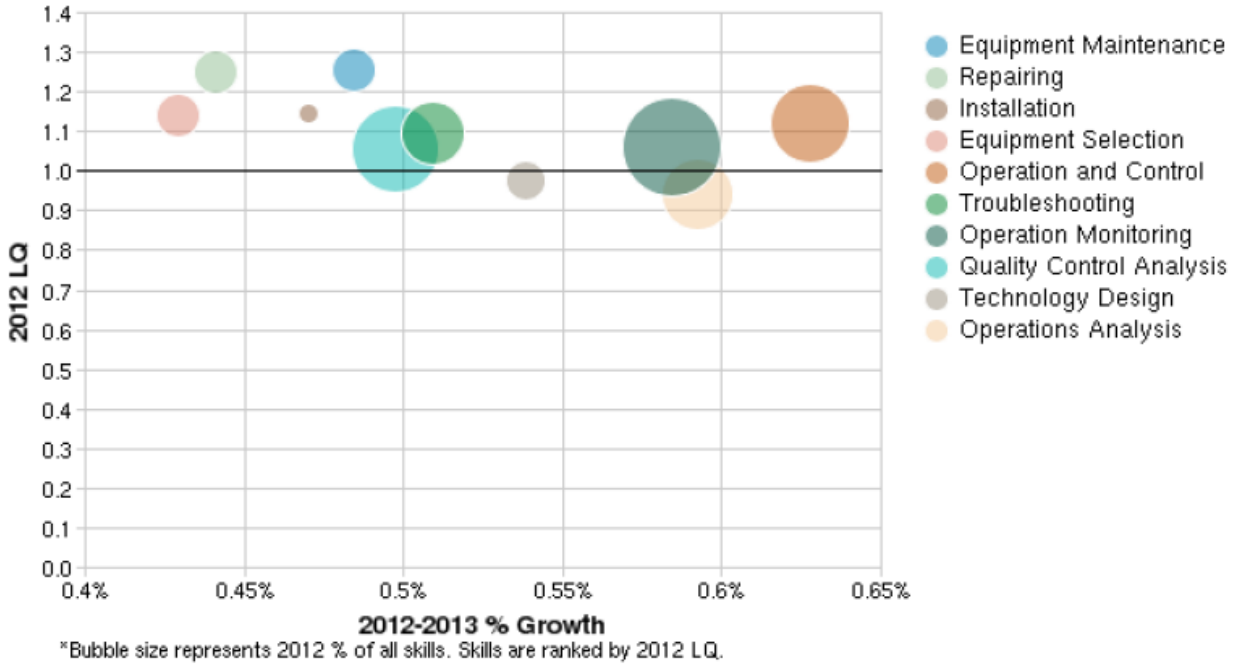
Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 22, 2013

Social Skills Concentrations



*Bubble size represents 2012 % of all skills. Skills are ranked by 2012 LQ.

Technical Skills Concentrations

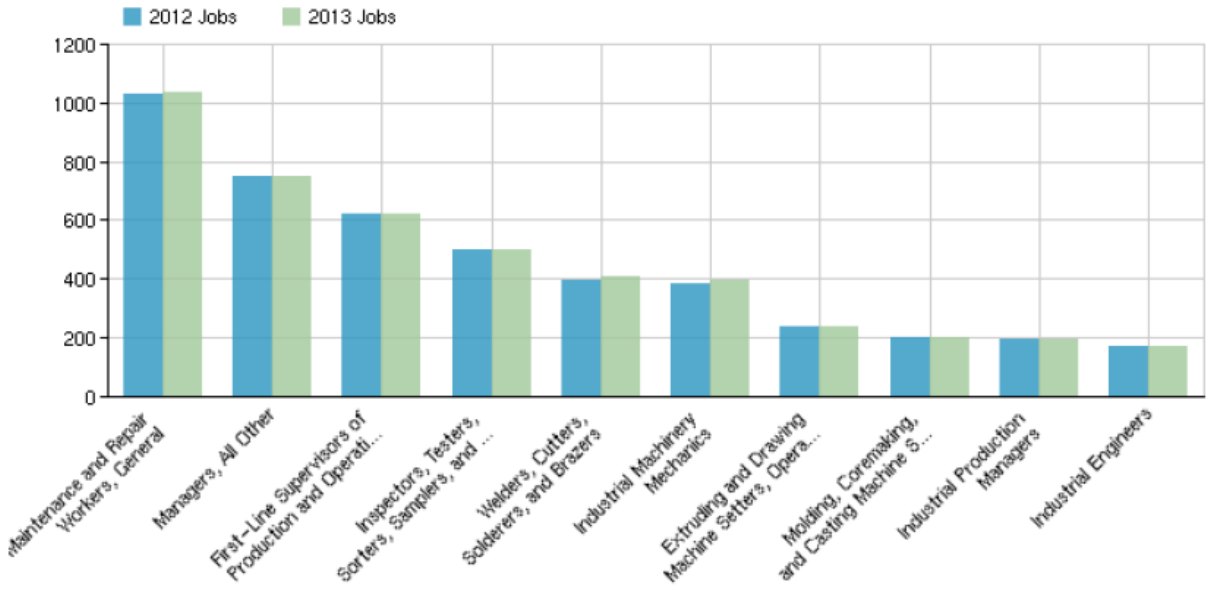


*Bubble size represents 2012 % of all skills. Skills are ranked by 2012 LQ.

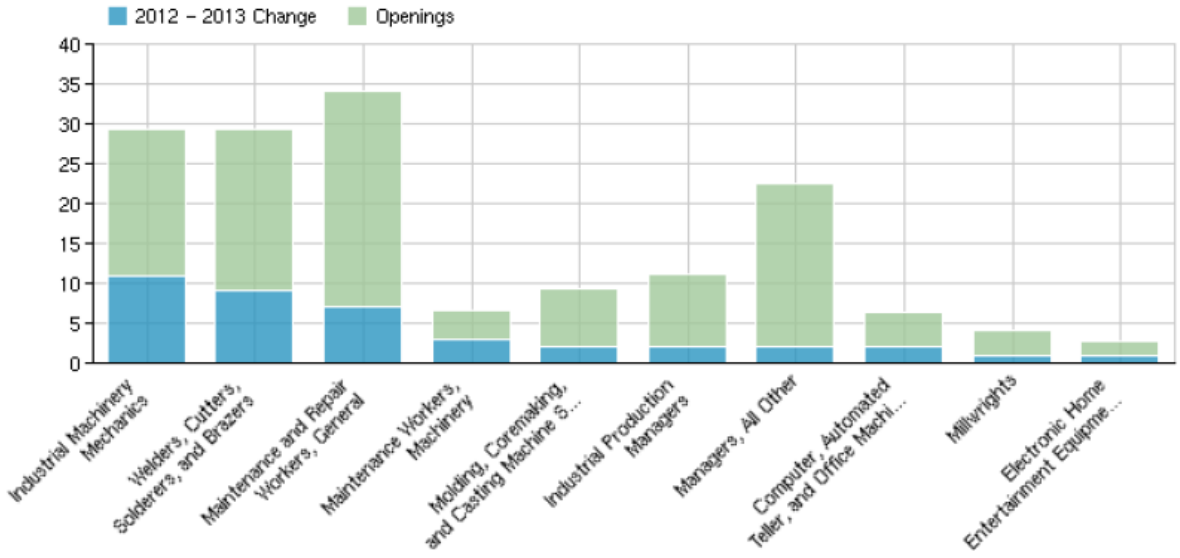
Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 22, 2013

Manufacturing Cluster

Largest Occupations



Largest Growth



Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 22, 2013

Job Projection Report for the Region 7 Works Council

Region 7 – Clay, Parke, Putnam, Sullivan, Vermillion, and Vigo Counties

Occupation	Jobs 2012	% Change in Jobs 2013 - 2020	% of Current Workers Who are Male	Median Wage per Hour	Percent of Current Workforce 45-64 Years Old	Current Number Employees Retiring 2013-2033
Industrial Production Managers 11-3051	181	+10%	91%	$40.74	58%	105
Electrical Engineers 17-2071	58	-4.3%	98%	$37.00	59%	32
Mechanical Engineers 17-2141	149	+7.5%	95%	$33.77	46%	69
Electrical and Electronics Engineering Techs 17-3023	58	-5.1%	86%	$30.04	58%	34
Industrial Engineering Technicians 17-3026	52	+4.1%	88%	$19.91	58%	30
First-Line Supervisors of Mechanics, Installers and Repairers 49-1011	341	+9.8%	93%	$29.09	57%	194
Repairers, Commercial and Industrial Equipment 49-2094	55	-4.9%	92%	$23.50	56%	31
Automotive Body and Related Repairs 49-3021	79	+17.9%	100%	$17.36	37%	29
Automotive Service Technicians and Mechanics 49-3023	346	+15.3%	98%	$15.75	34%	118
Heating, Air Conditioning, and Refrigeration Mechanics and Installers 49-9021	147	+14.3%	98%	$19.12	37%	54
Industrial Machinery Mechanic 49-9041	366	+14.2%	98%	$22.31	54%	198
Maintenance Workers, Machinery 49-9043	72	+11.2%	100%	$17.03	54%	39
Maintenance and Repair Workers, General 49-9071	871	+7.4%	88%	$15.05	51%	446
Helpers – Installation, Maintenance, and Repair Workers 49-9098	38	+37.6%	93%	$10.18	29%	11
Installation, Maintenance, and Repair Workers, all others 49-9099	54	+17.3%	95%	$15.65	40%	22
First-line Supervisors of Production and Operating Workers 51-1011	589	+4.7%	84%	$25.06	52%	306
Electronic and Electrical Equipment Assemblers 51-2022	43	+15.7%	47%	$9.64	60%	26
Computer-Controlled Machine Tool Operators, Metal and Plastics	397	+9.3%	91%	$13.52	38%	151

51-4011						
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic 51-4021	321	-0.1%	91%	$14.11	43%	138
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic 51-4023	67	-3.9%	81%	$14.72	56%	38
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic 51-4031	409	-3.7%	78%	$13.68	43%	176
Grinding, Lapping, Polishing, and Buffing, Machine Tool Setters, Operators, and Tenders Metal and Plastic 51-4033,	75	+2.6%	92%	$16.78	46%	35
Machinist 51-4041	403	+13.8	95%	$16.61	49%	197
Multiple Machine Tool Setters, Operators, and Tenders , Metal and Plastic 51-4081	94	-3.4%	78%	$17.21	47%	44
Tool and Die Makers 51-4111	140	-3.7%	99%	$22.15	61%	85
Welders, Cutters, Solders, and Blazers 51-4121	288	+25.7%	95%	$14.58	35%	101
Welding, Soldering, and Blazing Machine Setters, Operators, and Tenders 51-4122	104	-1.2%	96%	$16.65	34%	35
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders 51-9041	74	+6.1%	88%	$13.96	49%	36
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders 51-9121	83	+10.5%	89%	$14.89	40%	33
Painters, Transportation Equipment 51-9122	86	+10.4%	93%	$19.42	30%	26
First-line Supervisors of Helpers, Laborers, and Material Movers Hand 53-1021	142	+15.3%	80%	$17.73	47%	67
First-line Supervisors of Transportation and Material Moving Machine and Vehicle Operators 53-1031	152	+10.2%	83%	$22.43	49%	74

Report Notes: 32 occupations listed.

2,875 job openings projected in these occupations due to retirement between 2013 through 2033.

Calculating the projected percent increases /decreases in these occupations, Region 7 will see a net increase of 501 jobs in these occupations between now and 2020. (Retirements are not calculated in these projections.)

Source: Economic Modeling Specialists International (EMSI) generated by WorkOne October 28, 2013

Unemployment

August 2013 Labor Force Estimates *(not seasonally adjusted)*						
Area	Labor Force	Employed	Unemployed	Aug 2013 Rate	Jul 2013 Rate	Aug 2012 Rate
U.S.	155,971,000	144,509,000	11,462,000	7.3%	7.7%	8.2%
IN	3,177,923	2,940,433	237,490	7.5%	8.3%	8.4%
EGR 7	102,543	93,235	9,308	9.1%	10.4%	10.2%
Terre Haute MSA	77,490	70,092	7,398	9.5%	10.7%	10.7%
Clay Co.	12,157	11,149	1,008	8.3%	10.3%	10.4%
Parke Co.	7,598	6,950	648	8.5%	9.8%	9.7%
Putnam Co.	17,456	16,193	1,263	7.2%	9.6%	8.2%
Sullivan Co.	8,584	7,669	915	10.7%	11.0%	12.1%
Vermillion Co.	7,432	6,705	727	9.8%	10.7%	10.7%
Vigo Co.	49,316	44,569	4,747	9.6%	10.7%	10.5%
Terre Haute City	26,563	23,754	2,809	10.6%	11.8%	11.1%

State Release Date: 9/20/2013
Source: Indiana Dept of Workforce Development, Research and Analysis, UI Statistics

Unemployment Rank by County, August 2013
(high to low)

1	Sullivan	10.7%
3	Vermillion	9.8%
4	Vigo	9.6%
19	Parke	8.5%
22	Clay	8.3%
50	Putnam	7.2%

Source: Indiana Dept of Workforce Development, Research and Analysis, UI Statistics

Themes from Classroom to Careers (C2C) Input Sessions

Workforce Demands/Needs

Employers believe applicants lack basic skills (soft skills) in:

- Interviewing, resume-writing and communication
- Appropriate dress and behavior
- Basic and applied math
- Work ethic (e.g. being responsible, showing up for work, etc)
- Critical thinking and problem solving

Students appear not to be learning or retaining basic of math skills such as fractions, decimals, percentages, measuring, multiplication and division.

Despite relatively high salaries, benefits and tuition assistance for entry-level positions, there is a lack of interest in the manufacturing sector. Lack of interest in manufacturing could be due to the following factors:

- Stigma of manufacturing (as dirty, hot)
- Recent layoffs
- Lack of parental support
- Lack of motivation, aptitude and technical skills

Increasing marketing to high school students and parents may help to address the lack of interest in manufacturing careers.

Source: Fleck Education Summary C2C Project (EWIN Grant) October 28, 2013

Career Pathways

Examples of manufacturing-related pathways and programs currently offered by area Career and Technical Education programs:

Input Session	Manufacturing-related Pathways
Parke and Vermillion Counties	• Advanced Manufacturing • Welding • Project Lead the Way (Pre-Engineering)
Vigo and Sullivan Counties	• Manufacturing Processing • Manufacturing Production • Electronics • Welding • Machining • Project Lead the Way (Pre-Engineering)
Clay County	• Machining • Welding • Electronics • Advanced Manufacturing • Logistics
Putnam County	• Heavy equipment • Welding • Manufacturing • Engineering

Note: this table is based on examples given in the input sessions and may not include all programs offered.

Some of the challenges facing manufacturing-related pathway programs include:

- Lack of funding, time and transportation resources
- Difficulty in finding, training and retaining qualified instructors (partly because teacher salaries not competitive with industry salaries)
- Keeping machines and equipment up to date and relevant and training aligned with industries' needs can be difficult to coordinate and fund
- Difficulty in finding employers to participate in work-based learning programs
- Low interest in manufacturing from students (manufacturing selected as the default option)

Source: Fleck Education Summary C2C Project (EWIN Grant) October 28, 2013

Engagement of Business Partners

Examples of how business partners are currently engaging with schools:

Parke & Vermillion County	Vigo County	Putnam County
• Some employers are working with schools to provide cooperative education experiences	• Machining Group works with Career Pathways to ensure programs are aligned with needs. • Employers help calibrate and maintain machinery • Advanced Manufacturing Cluster Work Group • Sony shared its entry-level test for applicants with schools • Starks arrange field trips for middle school students to their manufacturing facilities • School counselor training & tours of local employers	• Duke Energy has provided grants to WorkOne and Ivy Tech • School counselors are touring manufacturing facilities and the Area 30 Career Center • Area 30 collaborates with employers to provide mock interviews and preparation days

Schools would like to expand business/industry participation in:

- Internships
- Field trips to manufacturing facilities
- Job Fairs
- Mock interviews and resume reviews
- Tuition reimbursement

Marketing and Awareness Building

More marketing is needed to educate the community about opportunities available within the region.

In particular, marketing needs to address:

- Availability of both high-demand and high-income jobs available in the region
- Qualifications needed for long-term career success
- Job descriptions
- Poor impression of manufacturing and stigmas of the past, including recession layoffs and the perception of manufacturing as a hot, dirty profession

Source: Fleck Education Summary C2C Project (EWIN Grant) October 28, 2013

Analysis of Pathways Alignment

What is the degree and magnitude of the workforce challenges faced in the region?

It appears that employability skills are one significant challenge in the region. These important skills that used to be common knowledge don't appear to be common. Examples include: Not typing in text abbreviation. Being able to read a simple print and then measure items for accuracy. Potential employee's being able to perform simple mathematical tasks like adding or multiplying fractions or converting fractions to decimals. Other challenges include potential employee's being able to locate information, show up for work consistently, and pass mandatory drug testing. The employability skills are also negatively impacting the Automotive Services and Construction Pathway.

Manufacturing has been impacted by both limited employability skills, quality potential employee interest, and limited workforce skills. This is further impacted by the aging workforce in manufacturing in Region 7. Multi-craft training is also important to manufacturing. Multi-craft meaning they have workers that understand the basics of welding, machining, hydraulics, pneumatics, electronics, programmable logic controllers, automated processes, and have the capacity and desire to learn new technology and manufacturing concepts.

Mathematical requirements' at the secondary level aligning with industry needs is a significant challenge. Some question if Algebra II should be a required mathematical course for a Core 40 diploma and if it best align with industry. There is an emphasis on "not lowering" mathematical expectations but focusing on the correct content for workforce needs and teaching the content differently. Many stated an applied mathematical approach was important to help reinforce multiple levels of mathematical skills and using these skills to solve an industry type problem. The council agrees that this issue will need additional work to determine "what" mathematics is important to industry and "how" it should be delivered.

How well do secondary CTE pathways outcomes align with regional industry needs?

Manufacturing represents the second largest employer in the region next to Government. The number of pathways and enrollment/retention in these pathways does not match the demand of this sector. Enrollment and retention are most noticeably struggling in the Advanced Manufacturing Pathway where several efforts to introduce industry certifications and new virtual software have been attempted. Enrollment is also low in some Welding and Machining pathways. There are currently only two Electronics Pathways and one Logistics Pathway in the region. Small schools, program costs, and geographic locations make it difficult to increase the quantity of pathway offerings in manufacturing.

The Machining Pathways that have industry recognized CNC Machines have strong industry partnerships and support that includes the donation of materials and tooling, assistance with machine maintenance, technical support, and excellent industry participation in the pathway. This is also noticeable in the Welding Pathways that are able to come close to keeping pace with industry.

Industry certifications at the secondary level are an area that will need to be revisited. In some cases industry certifications are being pursued at the secondary level and recertification by industry is still required making the industry certification secondary level have little value. Some industry professionals emphasized the need to focus on the basics and allowing students to make mistakes so that they are better prepared for post-secondary and the workforce. Some industry professionals stated focusing significant energy on certifications is actually making students less prepared for the workforce. Each certification will need to be looked at individually and if a certification is not an appropriate fit for the secondary level, what benchmark should be used.

Industry involvement in education needs to be a priority. Some industry professionals also state that it is important that industry works to make some careers more attractive. Efforts need to continue to develop connections between education and industry. This industry/education partnership can be helped greatly by better defining the protections for students and industry partners related to work-based learning. In many cases, industry partners are not able to allow students in their facilities for internships, cooperative experiences, or job shadowing because of the perceived liability. Protections for industries willing to provide these opportunities would help strengthen these partnerships. Legal opinions need provided to industries assuring there protection if it already exists and if not, legislative action may be required to provide the necessary protections for industry to allow students high quality industry placements while limiting the liability of individual companies.

Does the talent pipeline available through CTE match the demand that exists in the region?

The qualitative data from the Classroom to Career (C2C) EWIN grant shows that there are current workforce shortages in many manufacturing careers as well as a potential workforce that is lacking employability skills. In addition, the quantitative data from the WorkOne Western Indiana "Jobs Projection" report shows that there will be many more openings over the next 20 years. In addition, many of these positions are currently held by males with a limited number of females in the pipeline. The WorkOne report also shows future career demand in Logistics, Automotive Services, and Construction fields. Though many of these fields are now high tech, some think the perception of these careers as being "manual labor" is keeping some from pursuing these fields. The C2C project identifies some strategies to change this perception and improve the understanding of employability skills.

Community and Community Leader education is critical in these pathways. Many people do not understand what logistics is and the opportunities related to logistics. Career days and participation by industry in open houses and 8th grade orientations can help educate parents and community members on these opportunities. More work will need to done to determine the best ways to help people understand the awesomeness of operating a laser that can cut a one inch thick piece of steel or how logistics plays an important role in today's industries.

What innovative examples from CTE curricula (internships, apprenticeships, certifications, etc.) are already happening within the region?

Process Engineering- One School in the region is operating a higher level manufacturing pathway and referring to it as "Process Engineering". The students use computer controlled machines and automated processes to make real products. Students learn to use the latest hi-tech equipment and software. Students learn to use Computer-Aided-Design (CAD) and Computer-Aided-Manufacturing (CAM) to take a product from concept to production. These students can earn up to 9 dual college credits and multiple industry certifications including NIMS CNC Milling & Turning Programming Setup and Operations Level 1.

Advanced Manufacturing (schools would like to use an alternative title to help with recruitment)- Four schools that are currently struggling with Advanced Manufacturing student retention and certification are working with a local college as part of an Innovation Grant to pave the way for revised curriculum and delivery strategies that meet State standards while ending with aligned dual college credit with a four year institution. Information from multiple sources is being used to develop this new approach including input from current industry partners and notes from the original State Advanced Manufacturing development team. This hands-on approach to manufacturing includes a capstone Supervised Advanced Manufacturing Experience (S.A.M.E.) allowing for maximum flexibility in work based learning would enable to provide students with custom experiences and direct industry participation.

Indiana State University Manufacturing Engineering Technology Articulation Proposal after Review of Revised Advanced Manufacturing Curriculum Proposal (Introductory Paragraph Only)

This document serves as a proposal for the granting of the Vigo County School Corporation (VCSC) a block six credit, Indiana State University (ISU), course transfer after their high school students have taken Advanced Manufacturing I and Advanced Manufacturing II. Six credits are being proposed to come from the Manufacturing Engineering Technology (MFET) program (formally known as Advanced Manufacturing Management) in the College of Technology. The courses are an integral part of the curriculum for the Bachelor of Science in MFET. If students want to pursue a B.S. in AMM a six credit head-start would be granted to them enabling them to

pursue the degree at a faster pace. Concepts underlying MFET 130 and MFET 230 courses will span the state standards for Advanced Manufacturing I & II.

Industry Involvement Impact- A Machining Pathway at a school had industry representatives perform demonstrations during an open house/student orientation in their uniform. The owner of the company was also in attendance to discuss with parents opportunities in the machining field. At this open house there was a line of parents and students stretching into the hall to see the industry professionals perform and create magical items with the CNC machines. Enrollment significantly increased for that pathway at that school the next year. This high-profile industry participation had an impact on the parents' perception of career opportunities and the future in this particular field.

Counselor Academy- Some school districts are providing a "Counselor Academy" for middle and high school counselors to learn more about career pathways and workforce opportunities. There are a couple of different structures in the region. All counselor education programs include an industry tour component. Some provide hands-on experiences for the counselors in each pathway and then share important workforce data. This program has helped counselors better understand career opportunities in several pathways.

What are the next steps that the Works Council needs to take to improve CTE opportunities?

There are two alternative models of curriculum delivery for existing pathways. One focuses on the hi-tech side of manufacturing and refers to it as "Process Engineering" and the other is taking a pathway that is currently having poor student retention and focusing on a more hands-on approach to delivering the content standards in an effort to improve retention. The Works Council would like to learn more about both efforts and see how the council can assist in the success and expansion of these efforts. The curriculum also needs reviewed by industry professionals to ensure inclusion of concepts like Statistical Process Control (SPC). The work based learning component (S.A.M.E.) could also be expanded to other pathways but will require permission from the State to operate this different structured work-based learning component that is currently being developed as a proposal.

There is also a need for a "Multi-Craft" pathway in this region that will allow schools with limited resources to provide skills that will help students transition into the workforce and be successful. A multi-craft pathway can be taught in smaller and larger schools. This path should include basic welding, machining, fluid power, electronics, engine fundamentals, simple machines, jigs & fixtures, and tool/machine identification, usage & safe operation. This would help with Industrial Maintenance and general manufacturing skills but would need a different name. Teacher licensing flexibility will be critical to allow schools of all sizes to implement this

pathway. With the support of the State, a skills checklist can be developed that would help ensure that students would have the employability skills and basic technical skills needed to transition to post-secondary training or directly to the workforce. A regional (or State) certificate developed by industry would be presented to successful student completers showing that they have the employability skills and basic technical skills. The National Career Readiness Certificate could be used for the employability skills side. This would allow industry to see if the student is Platinum, Gold, Silver, or Bronze rated before hiring and providing additional training. Schools could also be given access to the WIN Remediation tool to help students understand these employability skills. It is the councils understanding that there is a mechanism in place to allow for testing of 18 year old individuals. For these resources to be utilized to their full potential the age should be dropped to a level that covers high school age students so these tools can be used to reinforce employability skills. The appropriate age is yet to be determined to maximize this opportunity but it will need to include 17 year old students at a minimum to be used in the senior year.

There is also a need to look toward the future and start working to develop a "Robotics and Automation" Pathway. This pathway would be used to introduce current robotic technology used in industry and also look to the future and how humanoid robots will be integrated into the manufacturing process. There are some industry robots, one humanoid robot, VEX robots, Fishertechniks, and First Robotics all in the region along with several other devices for automation but there is not a pathway that focuses on this type of technology. It is anticipated that student interest would be high in this pathway and it would help give a competitive edge when working to attract new industry to the region.

Summary Confirming Information EGR 7 Workforce Investment Board October 2013 Report

The proposed career pathways and recommendations of the Region 7 Works Council are in alignment with the targeted business sectors and strategies of the Western Indiana Workforce Investment Board. Regional targeted business sectors of the Western Indiana WIB include: 1) Manufacturing, 2) Construction, 3) Transportation and Warehousing, and 4) Healthcare and Social Assistance. Strategies that support the focus of the Region 7 Works Council include solicitation and support of training programs for WIA youth, adults, and dislocated workers in areas of study related to targeted business sectors. Also, through obtainment and administration of non-WIA grants, such as the Duke Energy Foundation Grant which provides industrial maintenance certification for the region's incumbent manufacturing workforce. The WIB further demonstrates support for proposed career pathways and recommendations of the Region 7 Works Council through its 2013 funding of WIA summer youth career camps in manufacturing, construction, healthcare, computer technology and robotics.